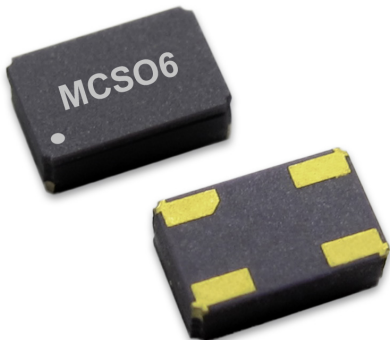




MCSO6 family package 3.5×2.2 mm

From 10 kHz up to 155 MHz

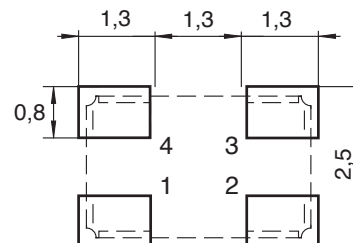
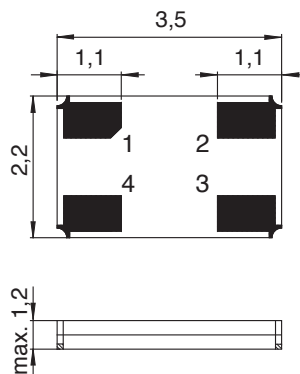


100% Leadfree, RoHscompliant:

DIMENSIONS

Package:
Bottom view

Recommended Solder Pad:



pin 1 E/D
pin 2 GND
pin 3 Fout
pin 4 Vdd

All dimensions in mm typical

SMT Clock oscillator in ceramic package
Fundamental quartz mode frequency
High shock and vibration resistance
Wide temperature range
Low aging
Ultra low MSL
Very fast start-up
Excellent solderability
Swiss made quality
Customer specification on request

DESCRIPTION:

This SMD oscillator in ceramic package has been specially designed for surface mount using infrared, vapor phase or epoxy techniques.

APPLICATIONS:

- Avionics
- Airbone equipments
- Remote control
- Security application
- Radio Transceiver
- Microprocessor clocks

The MCSO6's are supplied on trays (208 pcs / tray)

For pick-and-place equipment, the parts are available in 12mm tapes with

- 250 parts min
- 1000 parts min

ELECTRICAL CHARACTERISTICS AT +25°C

Frequency stability Over temperature range (see ordering info) Including: adjustment at +25°C long term aging 10 years over supply voltage $\pm 5\%$ over load min to max	$\Delta F/F$	$\leq \pm 100$	ppm
Frequency stability version T Over temperature range (see ordering info) Including: adjustment at +25°C long term aging 1 year over supply voltage $\pm 5\%$ over load min to max	$\Delta F/F$	$\leq \pm 50$	ppm
Supply voltage $\pm 5\%$ 1)*	Vdd	2.5 / 3.3 / 5	V
Input current	Idd	see table 1	
Output signal		HC-MOS compatible	
Symmetry at Vdd/2		40 / 60	%
Rise & fall time For F=32.768 kHz rise & fall time $\leq 150\text{ns}$ (load 15pf 20% to 80%)		≤ 7	ns
Level "0" & "1"		$<0.4>V_{dd}-0.5$	V
Start-up time	t	<5	ms
Load min / max		3/47	pF

* 1) C = 47nF ceramic must be connected between GND & Vdd

**TABLE 1: Idd
(Without load)**

Frequency	F= 32 kHz	F=< 10MHz	≤ 20MHz	>20 to 155MHz
W =Vdd = 2.5V	< 300μA	< 2mA	< 3mA	< 25mA
V =Vdd = 3.3V	< 1mA	< 4mA	< 5mA	< 30mA
blank=Vdd = 5V	< 2mA	< 6mA	< 7mA	< 40mA

STANDARD FREQUENCIES:

Frequency «MHz»						
4	8	10	12	16	20	24
40	50	60				
Other frequencies from 10 kHz up to 155 MHz on request						

**ENVIRONMENTAL
CHARACTERISTICS:**

Storage temp. range	-65 to +125°C
Vibration resistance	10 to 2000Hz / 20g
Shocks no resistance	5000g / 0.3ms / ½ sine

**TERMINATIONS AND
PROCESSING:**

Reflow soldering	+260°C / 10s max
Package	Ceramic 3.5 x 2.2 x 1.2mm
Lids	Ceramic
Terminations option T3 on request	with tinned Ag/Cu/Zn
E/D option 1 on request Reaction time < 1μs	Pin 1 open → Pin 3 Clock H → Clock L → Low

- No power E/D function (pin 1) before Vdd is setting on
- E/D option not available for F < 500 kHz
- E/D option on request (very low consumption in disable mode).

**PRODUCT DESCRIPTION AND
ORDERING INFORMATION:**

MCSO6				V	T	-	C	20MHz	E/D	T3	XXX
W = Vdd 2.5V											
V = Vdd 3.3V											
blank = Vdd 5V											
T = ±50ppm											
blank = ±100ppm											
A = 0 to +70°C											
B = -40 to +85°C											
C = -55 to +125°C											
X = custom											
Frequency											
A unique part number will be generated for each product specification											
20xxxx-EA00				xxx pcs (in ESD plastic tray)							
200xxx-ML00				xxx pcs (in tape & reel, any quantity)							
</											